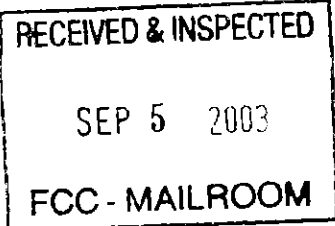


Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554



In the Matter of)
)
Rulemaking under Part 97 of)
the Communications Act of 1934,) Docket No. _____
as amended, to Revise License)
Classes, Privileges, and)
Examination Requirements Related)
to the Amateur Radio Service)

To: The Commission

PETITION FOR RULEMAKING

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Petitioners

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1. Introduction

This petition addresses the following areas with respect to the Amateur Radio Service

- 1 Consolidation of license classes,
- 2 Frequency and Mode Privilege reallocation, and
- 3 Examination Requirements

Petitioners have designed this Petition with the goal of reducing the Commission's workload and streamlining the Commission's record-keeping requirements, as well as those of Volunteer Examiner Coordinators, Volunteer Examiners, licensees, and candidates for license

Petitioners suggest that implementation of these proposals would provide encouragement to all Amateur Radio Service licensees to take advantage of educational opportunities and individual experimentation, thus further enhancing their ability to contribute to the radio art

2. Background and Discussion

2.1 Consolidation of License Classes

Between February 14, 1991 and July 5, 1991, the Commission granted 1,925 new Technician class licenses under the no-code provisions. Petitioners' research shows that 1,880 of those licenses have not been renewed or upgraded to a higher class license and are beyond the two year grace period. That equates to a retention rate of only 2.3%

Petitioners' further research using the Universal Licensing System search function was blocked because licenses are shown as "active" until the expiration of the grace period, and there is no provision for search using multiple date parameters. However, based on this limited data, one of two conclusions may be reached. Either the no-code licensing provision did not attract individuals with any depth of interest in radio communications, or the lack of access to frequencies below 30MHz frustrated those newly licensed individuals to the point of giving up. Given either interpretation, Petitioners suggest the no-code Technician experiment did in fact attract larger numbers of people, as was initially hoped, but apparently did not offer sufficient opportunity for them to expand their knowledge and skills, nor did these individuals bring long-term benefit to the Amateur Radio Service.

On December 30, 1999 Report and Order, the Commission stated, "We observe that the primary difference between the Advanced Class operator license and the Amateur Extra Class operator license is not the difficulty of the Amateur Extra Class written examination but, rather, the 20 wpm telegraphy examination which, as we explain below, we are eliminating as a requirement to obtain the Amateur Extra Class operator license. We also agree with NCVEC that the difference in authorized frequency privileges between the Advanced Class operator license and the Amateur Extra Class operator license is minimal and does not alone warrant maintaining two separate license classes in the future."

The Commission declined, at that time, to "undertake a comprehensive restructuring of the amateur service operating privileges and frequencies" until the amateur community reached consensus.

The Commission also left orphaned the Novice class amateur radio license.

Petitioners suggest there is overwhelming consensus in the amateur community that these two orphaned classes should be integrated back into the mainstream of the amateur community.

2.2 Frequency and Mode Privilege reallocation

On December 30, 1999 the Commission released its Report and Order revising the Amateur Radio Service license structure and International Morse code testing requirements. The Commission declined, at that time, to "undertake a comprehensive restructuring of the amateur service operating privileges and frequencies" until the amateur community reached consensus.

As stated in 2.1 Petitioners suggest there is overwhelming consensus in the amateur community to merge the two orphaned classes. This action will streamline the Commission's record keeping needs and simplify the maintenance of frequency and mode privilege allocations.

Upon merging the Novice and Technician as well as the Advanced and Amateur Extra license classes, considering the ITU action and the growing consensus among the Amateur community, given the no-code VHF only Technician experiment has attracted far fewer dedicated, long term operators than desired, and noting that a significant number of new entrants into the Amateur Radio Service have a strong interest in new technologies and digital modes, it seems only reasonable to modify the frequency and mode allocations for the new, consolidated, Technician class.

Petitioners have examined the history of U.S. frequency allocation. It appears that the Commission has always tried to protect the new, inexperienced, operators from their own lack of experience by putting their privileges away from the band edges and by limiting them in power output. Examples of this are the Novice allocations on 80, 40, and 15 meters and the Novice and Technician Plus allocations on the 10-meter Band. Since the HF spectrum is the area in which international communications are prevalent, these allocations minimized the possibility of interference to other services. The amateur community generally agrees this procedure is in the best interest of the Amateur Radio Service.

2.3 Examination Requirements

On December 30, 1999 the Commission released its Report and Order revising the Amateur Radio Service license structure and International Morse code testing requirements. At that time, the Commission reduced the telegraphy examinations from three elements to one, and set the number of written examination questions required at 35 for Technician, 35 for General, and 50 for Extra, and left to the National Council of Volunteer Examiner Coordinators (NCVEC) the task of the specific mix and makeup of written examination tests.

The Commission did, however, encourage the Amateur Service to strive to "attract technically inclined persons, particularly the youth of our country, and encourage them to learn and to prepare themselves in the areas where the United States needs expertise." Further, the Commission specifically addressed its desire to "provide an incentive for licensees to continue the educational opportunities offered by amateur radio as The American Radio Relay League, Inc. (ARRL) requests, will continue to provide an incentive for amateur radio operators to advance their communication and technical skills," and to

encourage individuals in the Amateur Service to become "trained operators, technicians, and electronic experts " The Commission also said, "In reaching this decision, we note that one of the fundamental purposes underlying our Part 97 rules is to accommodate the amateur radio operator's proven ability to contribute to the advancement of the radio art "

The ITU has, in its 2003 Conference, left to individual administrations whether candidates for the Amateur Radio Service should demonstrate proficiency in International Morse code

The ITU also adopted the following new language in Provision 25.6 "Administrations shall verify the operational and technical qualifications of any person wishing to operate an amateur station Guidance for standards of competence may be found in the most recent version of Recommendation ITU-R M 1544 "

There has been great debate in the amateur community over the retention of code testing. Petitioners observe that, in most of these discussions, the issue of technical competence arises as a major point. There appear to be three groups in these discussions, one which advocates complete elimination of code testing. A majority of this group either advocates increasing the difficulty of written elements or concedes that it is necessary. A second group advocates nothing short of retaining code testing as a "make or break" element. Most members of this group agree the current written test elements are seriously deficient. The third falls in the middle ground on the code issue. Amateurs in this group also agree that the written testing elements should be enhanced to adequately assess a candidate's knowledge and ability.

Based on these observations, Petitioners see a need for continued International Morse code testing, but do not believe code testing should be the main determining factor. Similarly, Petitioners see a need for more comprehensive written examinations.

Petitioners have attempted to objectively analyze activity levels for the various modes in three categories, International Morse code (CW), Phone (primarily SSB), and Digital (all types) on the high frequency bands. The complete study, prepared by Mr. Walter B. Fair, W5ALT, is included with his permission as Attachment A. The following paragraph in the conclusion section of this report should be noted:

"Based on the analyses presented below, it appears that the CW issue in ham radio is often based on emotion rather than fact. The data do not indicate an overall decrease in CW activity. The argument being used by CW opponents that CW is dying seems to have no merit. On the other hand, the argument that relaxing the CW test requirement to 5 WPM would lead to the destruction of the Amateur Radio Service does not seem to have merit, either. The data show that when the code testing was relaxed in 2000, CW activity remained stable in the following years. Therefore, if more newer hams started using SSB, the same percentage also started using CW. I interpret that to mean that most hams will use the mode that meets their objectives, whether it is CW or not. Of course, there will always be vocal minorities in both the pro and con CW camps."

Petitioners suggest as a single mode of operation International Morse code is alive, well, and apparently used by a large portion of the Amateur Community. Especially in light of the major role the CW mode plays in international communications, Petitioners suggest

that eliminating International Morse code testing altogether would be a tremendous disservice to the U S amateur community.

Following the elimination of Amateur Radio Service testing at Commission Field Offices, the concept of Certificate of Successful Completion of Examination (CSCE) was introduced. The system of CSCEs is now pervasive, and presents a significant paperwork and record-keeping burden on Volunteer Examiner Coordinators, Volunteer Examiners, licensees, and candidates for license.

3. Scope of Proposals

3.1 Consolidation of license classes

3.1.1 As per paragraph 2.1, Petitioners suggest it is time to consolidate the Novice and Technician and Technician Plus licenses into one Technician license. This would allow the Commission to simplify record keeping and bring the orphaned Novice licensees back into the Commission's license progression scheme. The upgrade procedure would be automatic immediately and the new license issued at the normal renewal time.

3.1.2 As per paragraph 2.1, Petitioners further suggest it is time to consolidate the Advanced and Amateur Extra licenses. This would also simplify the Commission's record keeping and upgrade these operators who have all passed examination elements with requirements higher than, or equal to those required today. The upgrade procedure would be automatic immediately and the new license issued at the normal renewal time.

3.2 Frequency, Power, and Mode Privilege reallocation;

3.2.1 Petitioners recommend that the newly revised Technician license should have privileges as outlined in paragraph 4.2 below. This allows in general:

1. 80 meters: CW and data privileges on 3600 through 3750 kHz. This is an increase of 100 kHz of bandwidth and the addition of data modes to the present Novice allocation.

2. 40 meters: CW and data privileges on 7100 through 7150 kHz. This adds data modes to the existing Novice allocations.

3. 15 meters: CW and data privileges on 21100 through 21200 kHz. This adds data modes to the existing Novice frequency allocations.

4. 10 meters: CW and data privileges on 28100 through 28300 kHz. This represents no change to the existing Novice and Technician Plus allocations.

5. 10 meters: CW and Voice privileges on 28300 through 28600 kHz. This is an increase of 100 kHz of bandwidth to the existing Novice and Technician Plus allocations.

- 6 Above 30 Mhz. All frequencies, modes, and power levels as contained in the current regulations

3.2.2 Petitioners recommend that power limitations be placed on the newly consolidated Technician Class in the same fashion as has been historically imposed on the lowest beginner class of operator license in the allocated HF frequencies. This limitation protects other users of the HF spectrum from inadvertent errors commonly made by the inexperienced operator. Petitioners recommend a 200 Watt limit for the Technician class license on all frequencies below 30 Mhz as indicated in paragraph 4 2 3.

3.2.3 Petitioners recommend, upon merging the Advanced and Amateur Extra license classes, that the newly revised Amateur Extra class be assigned all those privileges allowed the present Amateur Extra class license

3.3 Examination Requirements

3.3.1 As per paragraph 2 3, Petitioners suggest it is time to review and make certain changes to the Element 1 (International Morse code) testing requirement. In light of the ITU's actions it is indeed time to regard the International Morse code as another mode of operation equal to but of no greater importance than any other mode. As demonstrating competence in other modes is not necessary to gain access the HF frequencies, it occurs to the Petitioners that it is time to remove this as an absolute requirement. Petitioners suggest, however, that International Morse code testing should be continued as part of the overall license examination for good reason, as discussed in Section 2 3 3.

3.3.2 It is believed by the Petitioners that the International Morse code remains a viable, valuable, and popular mode. See the discussion in 2 3 above. When all else fails in emergency circumstances, International Morse code remains as the only useable option. CW is also an "International Language", by which, peoples of the world who have differing spoken languages can communicate efficiently. Petitioners note that written examinations for all classes include questions designed to ascertain a candidate's knowledge of various modes. This petition proposes that, while written examination questions are sufficient to evaluate a license candidate's familiarity with the basic concepts of other modes, such testing is not sufficient for International Morse code.

Petitioners recommend that testing of International Morse code be continued but that such testing should be integrated into the overall test score in a more equitable fashion. It is recommended that the Element 1 test should be scored such that the longest string of *continuous characters should be counted (with numbers and punctuation being weighted* as two characters) and such count, up to a maximum of 24, should be then divided by two and the result added to the score of the written examination. This test would be available to all candidates for every class of license.

3.3.3 As per paragraph 2 3 it is further believed by Petitioners that it is time to increase the number of written test items required to successfully indicate competence at all license levels.

Petitioners have analyzed current and previous question pools developed by the NCVEC and found that the current examinations do not assess candidates' required knowledge of technical matters and the Commission Rules and Regulations as thoroughly as in the past. This is due, in large measure, to the limitation of actual test question numbers for Technician and General at 35, and for Amateur Extra at 50. To its credit, the NCVEC has responded to this limitation by greatly expanding the number of questions in each question pool.

Petitioners suggest the actual test questions, however, have been significantly more slanted toward procedures, and less toward technical competence and regulations. This is due to the limitation on the number of actual examination questions.

Petitioners present the following examples

- 1 Individuals who achieved the 1997 Technician license had passed two written examination elements totaling 65 questions, of which fifteen (23%) were in the area of Commission Rules. Technicians today encounter a total of just 35 written examination questions, only five (14%) of which are in the Commission Rules category. All five may be answered incorrectly, plus four more in other areas, and the candidate will still achieve a passing score.
- 2 Of the 65 total questions in the Novice and Technician examinations in 1997, there were four questions dealing with propagation. In the current 35 question Technician examination, there are only two.
3. The Novice and Technician examinations in 1997, combined, had ten questions (15%) dealing with electronic theory and components. The current Technician examination has just three (8%).
- 4 A person achieving a General class license in 1998 encountered a total of 95 test questions. Of those, nineteen were in the Commission Rules category. A person achieving General today faces 70 questions, eleven of which fall in that category.
- 5 The cumulative examinations necessary for a General class license in 1998 contained seven questions dealing with propagation. The cumulative examinations necessary for General today contain only five propagation questions.
- 6 The 95 questions leading to a General class license in 1998 included thirteen (13%) on electronic theory and components. The 70 questions leading to General today include only six (8%).

Petitioners' comparative research of prior question pools was incomplete because neither the NCVEC nor, apparently, any of its entities maintain them as archive material. Fortunately, some of the question pools of interest were recovered from non-official sources. Future studies undertaken as part of rule making proceedings would benefit from their prolonged availability.

The increasing complexity of the radio art, combined with the elimination of Novice and Advanced licenses, have outstripped the ability of a 35 question examination for Technician and General, and a 50 question examination for Amateur Extra to sufficiently evaluate a candidate's operational and technical qualifications. Petitioners suggest that increasing both the number of questions required for each class and the minimum passing scores, as well as assuring a technical and regulatory focus are reasonable solutions. The testing requirements as outlined below would restore the number of examination questions and the number of required correct answers to an approximation of the pre-April 15, 2000 requirements for Technician, General, and Amateur Extra licenses.

Petitioners have observed a widespread recognition in the amateur community that the current examination structure allows individuals who learn published question and answer material quickly to rapidly advance in license class without gaining real understanding of the underlying material. Therefore, this proposal incorporates a requirement for minimum experience in each class of license prior to advancing to the next. Petitioners suggest this will provide practical experience, encourage experimentation and help develop well trained operators, technicians, and electronic experts.

3.3.4 Petitioners suggest it is incumbent on the Commission to mandate the specific mix of topics, number of questions, and minimum passing requirement for all Amateur Radio Service written examinations. It is not, however, necessary at this time for the Commission to develop the actual question pools. This task could very well remain in the hands of the NCVEC.

Petitioners recommend a written test length of forty-four questions for the Technician license (each question scored as two points) and eighty-eight questions for the General and Amateur Extra license (each question having a value of one point), with questions to be divided into six categories as indicated in paragraph 4.3.

The final score for the license examination would be the sum of the Element 1 exam and the score on the written portion giving a total possible of 100 points. A total cumulative score of 75 points would be the minimum passing grade. This method of integrating the Element 1 test and the written examination allows two paths for progression within the Amateur Radio Service, first, for the technically talented individual to obtain an amateur license in the upper levels of the service without the absolute necessity of learning the International Morse code and second, the more traditionally skilled communicator to receive credit for his extended capabilities, thus bringing into balance the mandates of 47CFR97.1.

3.3.5 Given the composite nature of the examinations suggested by Petitioners, there would no longer be a need to issue CSCEs, and to continue their issuance would in fact be impractical.

3.3.6 Petitioners recognize there have been thousands of CSCE documents issued by VEs and that the holders of these documents should be credited for the hard work the CSCE represents. Petitioners recommend that the holder of an Element 1 CSCE issued prior to the date of the Commission's Order in this matter be credited with 12 points in lieu of the Element 1 examination. Petitioners further recommend the holder of an element 3 or

4 CSCE issued prior to the date of the Commission's Order in this matter be credited with 65 points in lieu of the respective examination

3.3.7 Petitioners have analyzed the existing testing procedure and believe this proposal offers the most balanced and seamless integration approach possible. Considering the following scenarios, it will be seen that it offers more options for individuals to enter the Amateur Radio Service while assuring the individual has the knowledge necessary to properly control a radio station with minimum opportunity for causing interference to other services.

Candidates scoring the maximum 12 points in the Element 1 portion of the composite examination will need 63 additional points to obtain a license. For the Technician license this would require 32 out of the possible 44 questions, or 72.7% correct necessary to pass. For the General or Amateur Extra, it would require 63 out of the possible 88 questions, or 71.5% correct to pass. Both figures indicate that the candidate has at least minimum knowledge to properly control an amateur station and should be eligible for a license.

Candidates scoring a zero in the Element 1 portion of the composite examination will need 75 additional points to obtain a license. For the Technician license this would require 38 out of the possible 44 questions, or 86.3% correct to pass. For the General or Amateur Extra, the minimum correct would be 75 out of the possible 88 questions, or 85.2% correct to pass. Both figures indicate that the candidate has a superior knowledge to properly control an amateur station and, though he does not demonstrate any skill with International Morse code, should be eligible for a license.

In the case of a CSCE Element 3 holder, the candidate has two options, he may take the Element 1 portion of the composite examination and add the score of this exam to his allowed 65 points for a total score. Should this candidate fail to obtain the minimum necessary 10 points, he may elect to take the new Element 3 portion of the composite examination and use the sum of the scores on the Element 1 and the Element 3 portions to qualify for a license.

4. Specific Proposals

4.1 Class Consolidation

4.1.1 In reference to paragraph 3.1, petitioners recommend 47CFR97.5(b)(2) be replaced with the following:

(2) A club station license grant. A club station license grant may be held only by the person who is the license trustee designated by an officer of the club. The trustee must be a person who holds an Amateur Extra, General, or Technician operator license grant. The club must be composed of at least four persons and must have a name, a document of organization, management, and a primary purpose devoted to amateur service activities consistent with this part.

4.1.2 In reference to paragraph 3.1, petitioners recommend 47CFR97.9(a) and (b) be replaced with the following

(a) The classes of amateur operator license grants are: Technician, General, and Amateur Extra. The person named in the operator license grant is authorized to be the control operator of an amateur station with the privileges authorized to the operator class specified on the license grant.

(b) The person named in an operator license grant of Technician or General who has properly submitted to the administering VEs, a FCC Form 605 document requesting examination for an operator license grant of a higher class, and who holds a CSCE indicating that the person has completed the necessary examinations within the previous 365 days, is authorized to exercise the rights and privileges of the higher operator class until a final disposition of the application or until 365 days following the passing of the examination, whichever comes first.

4.1.3 In reference to paragraph 3.1.1, petitioners recommend 47CFR97.9(c) be added

(c) Any person holding a valid Novice, Technician, or Technician Plus license shall be considered a Technician class operator until such license is renewed, at which time a Technician class license shall be issued.

4.1.4 In reference to paragraph 3.1.2, Petitioners recommend 47CFR97.9(d) be added

(d) Any person holding a valid Advanced license shall be considered an Amateur Extra class operator until the license is renewed, at which time an Amateur Extra class license shall be issued.

4.1.5 In reference to paragraph 3.1, Petitioners recommend 47CFR97.119(f) be replaced with the following

(f) When the control operator who is exercising the rights and privileges authorized by §97.9(b) of this Part, an indicator must be included after the call sign as follows:

(1) For a control operator who has requested a license modification from Technician to General Class: AG;

(2) For a control operator who has requested a license modification from Technician or General Class operator to Amateur Extra Class: AE.

4.1.6 In reference to paragraph 3.1.1, petitioners recommend 47CFR97.307(f)(10) be replaced with the following:

(10) A station having a control operator holding a Technician Class operator license may only transmit a CW emission using the international Morse code or phone emissions J3E and R3E.

4.1.7 In reference to paragraph 3.1.2, petitioners recommend 47CFR97.307(s) be replaced with the following

(s) An amateur station having an operator holding a General, or Amateur Extra Class license may only transmit single sideband, suppressed carrier, (emission type 2K8J3E) upper sideband on the channels 5332 kHz, 5348 kHz, 5368 kHz, 5373 kHz, and 5405 kHz. Amateur stations shall ensure that their transmission occupies only the 2.8 kHz centered around each of these frequencies. Transmissions shall not exceed an effective radiated power (e.r.p.) of 50 W PEP. For the purpose of computing e.r.p. the transmitter PEP will be multiplied with the antenna gain relative to a dipole or equivalent calculation in decibels. A half wave dipole antenna will be presumed to have a gain of 0 dBd. Licenses using other antennas must maintain in their records either the manufacturer data on the antenna gain or calculations of the antenna gain. No amateur station may cause harmful interference to stations authorized in the mobile and fixed services; nor is any amateur station protected from interference due to the operation of any such station.

4.1.8 In reference to paragraph 3.1.2, petitioners recommend 47CFR97.509(b)(3)(i) and (ii) be replaced with the following:

- (i) Amateur Extra or General Class in order to administer a Technician Class operator license examination,
- (ii) Amateur Extra Class in order to administer a General Class operator license examination;

4.1.9 In reference to paragraph 3.1, petitioners recommend 47CFR97.201(a) be replaced with the following:

(a) Any amateur station licensed to a holder of a Technician, General, or Amateur Extra Class operator license may be an auxiliary station. A holder of a Technician, General, or Amateur Extra Class operator license may be the control operator of an auxiliary station, subject to the privileges of the class of operator license held.

4.1.10 In reference to paragraph 3.1, petitioners recommend 47CFR97.203(a) be replaced with the following:

(a) Any amateur station licensed to a holder of a Technician, General, or Amateur Extra Class operator license may be a beacon. A holder of a Technician, General, or Amateur Extra Class operator license may be the control operator of a beacon, subject to the privileges of the class of operator license held.

4.1.11 In reference to paragraph 3.1, petitioners recommend 47CFR97.205(a) be replaced with the following:

"(a) Any amateur station licensed to a holder of a Technician, General, or Amateur Extra Class operator license may be a repeater. A holder of a Technician, General, or Amateur Extra Class operator license may be the control operator of a repeater, subject to the privileges of the class of operator license held.

4.2 Frequency, Power and Mode Privilege Reallocation

4.2.1 In reference to paragraph 3.2, Petitioners recommend the following change to 47CFR97.301

Sec. 97.301 Authorized frequency bands

The following transmitting frequency bands are available to an amateur station located within 50 km of the Earth's surface, within the specified ITU Region, and outside any area where the amateur service is regulated by any authority other than the FCC

- (a) For a station having a control operator who has been granted a Technician, General, or Amateur Extra Class operator license or who holds a CEPT radio-amateur license or IARP of any class

Wavelength band	ITU Region 1	ITU Region 2	ITU Region 3	Sharing requirements, see §97.303, paragraph:
<i>HF</i>		<i>MHz</i>		
80 m	3.600- 3.750	3.600- 3.750	3.600-3.750	(a)
40 m	7.050- 7.075	7.10-7.15	7.050-7.075	(a)
15 m	21.10- 21.20	21.10- 21.20	21.10-21.20	
10 m	28.1-28.6	28.1-28.6	28.1-28.6	
<i>VHF</i>		<i>MHz</i>		
6 m	--	50-54	50-54	(a)
2 m	144-146	144-148	144-148	(a)
1.25 m	-	219-220	-	(a), (e)
-do-	--	222-225	--	(a)
<i>UHF</i>		<i>MHz</i>		
70 cm	430-440	420-450	420-450	(a), (b), (f)
33 cm	--	902-928	--	(a), (b), (g)
23 cm	1240-1300	1240- 1300	1240- 1300	(h), (i)
13 cm	2300-2310	2300- 2310	2300- 2310	(a), (b), (i)

-do-	2390-2450	2390-2450	2390-2450	(a), (b), (l)
<i>SHF</i>		<i>GHz</i>		
9 cm	--	3.3-3.5	3.3-3.5	(a), (b), (k), (l)
5 cm	5 650-5 850	5 650-5.925	5 650-5 850	(a), (b), (m)
3 cm	10.00-10 50	10.00-10 50	10.00-10.50	(b), (c), (l), (n)
1 2 cm	24 00-24 25	24.00-24 25	24 00-24 25	(a), (b), (h), (o)
<i>EHF</i>		<i>GHz</i>		
6 mm	47 0-47 2	47 0-47 2	47 0-47.2	
4 mm	75 5-81.0	75.5-81.0	75.5-81 0	(b), (c), (h), (r)
2 5 mm	119 98-120.02	119.98-120.02	119 98-120.02	(k), (p)
2 mm	142-149	142-149	142-149	(b), (c), (h), (k)
1 mm	241-250	241-250	241-250	(b), (c), (h), (q)
--	above 300	above 300	above 300	(k)

(b) For a station having a control operator who has been granted an operator license of General or Amateur Extra Class

Wavelength band	ITU Region 1	ITU Region 2	ITU Region 3	Sharing requirements, see §97.303, paragraph:
<i>MF</i>		<i>kHz</i>		
160 m	1810-1850	1800-2000	1800-2000	(a), (b), (c)
<i>HF</i>		<i>MHz</i>		
80 m	3 525-3 750	3 525-3 750	3 525-3 750	(a)
75 m	--	3 85-4 00	3 85-3 90	(a)
40 m	7 025-	7 025-	7 025-	(a)

	7 100	7 150	7.100	
-do-	--	7 225- 7 300	--	(a)
30 m	10 10- 10 15	10 10- 10 15	10.10- 10 15	(d)
20 m	14 025- 14.150	14 025- 14 150	14 025- 14 150	
-do-	14.225- 14 350	14 225- 14 350	14.225- 14.350	
17 m	18.068- 18.168	18.068- 18 168	18.068- 18.168	
15 m	21.025- 21 200	21 025- 21 200	21.025- 21 200	
-do-	21 30- 21 45	21 30- 21 45	21 30- 21 45	
12 m	24 89- 24 99	24 89- 24.99	24 89- 24.99	
10 m	28 0-29.7	28 0-29 7	28 0-29 7	

(c) For a station having a control operator who has been granted an Amateur Extra Class operator license or who holds a CEPT radio-amateur license Class 1 license or Class 1 IARP:

Wavelength band	ITU Region 1	ITU Region 2	ITU Region 3	Sharing requirements, see §97.303, paragraph:
<i>MF</i>		<i>kHz</i>		
160 m	1810-1850	1800-2000	1800-2000	(a), (b), (c)
<i>HF</i>		<i>MHz</i>		
80 m	3 50-3 75	3 50-3 75	3 50-3 75	(a)
75 m	3 75-3 80	3.75-4.00	3.75-3 90	(a)
40 m	7 0-7 1	7 0-7 3	7 0-7 1	(a)
30 m	10 10- 10.15	10 10- 10 15	10 10- 10 15	(d)

20 m	14 00- 14 35	14 00- 14.35	14 00- 14 35
17 m	18 068- 18 168	18 068- 18 168	18 068- 18 168
15 m	21.00- 21 45	21 00- 21 45	21 00- 21 45
12 m	24 89- 24 99	24 89- 24 99	24 89- 24 99
10 m	28 0-29 7	28 0-29.7	28 0-29 7

4.2.2 In reference to paragraph 3.2, Petitioners recommend 47CFR97.307(f)(9) be replaced with the following

(9) A station having a control operator holding a Technician Class operator license may transmit a CW emission using the international Morse code, RTTY or data emission using a specified digital code listed in §97.309(a) of this Part. The symbol rate must not exceed 1200 bauds. For frequency-shift keying, the frequency shift between mark and space must not exceed 1 kHz.

4.2.3 In reference to paragraph 3.2.3, Petitioners recommend the following change to 47CFR97.313

Sec. 97.313 Transmitter power standards

(c) No station may transmit with a transmitter power exceeding 200 W PEP on

(1) The 7.10-7.15 MHz, 10.10-10.15, and 21.1-21.2 MHz segments;

(2) The 3.600-3.750 MHz and 28.1-28.6 MHz segments when the control operator is a Technician class operator; or

(3) The 7.050-7.075 MHz segment when the station is within ITU Regions 1 or 3

4.2.4 In reference to paragraph 3.2, petitioners recommend 47CFR97.313(d) and (e) be deleted

4.2.5 In reference to paragraph 4.2.4, petitioners recommend renumbering paragraphs 47CFR97.313(f), (g), and (h) as 47CFR97.313(d), (e), and (f) respectively.

4.3 Examination Requirements

4.3.1 In reference to Section 3.3, Petitioners recommend the following change to 47CFR97.501

Sec 97.501 Qualifying for an amateur operator license.

Each applicant must pass an examination for a new amateur operator license grant, and for each change in operator class above Technician, demonstrate significant experience in the Amateur Radio Service. For purposes of this section, significant experience is defined as a minimum of holding a Technician Class license for one year immediately prior to upgrading to General, and a minimum two years of holding a General Class license immediately prior to upgrading to Amateur Extra.

Each applicant for the class of operator license grant specified below must have the prior experience indicated, and must pass, or otherwise receive credit for, examinations consisting of the following elements:

- (a) Technician Class operator. no prior examinations or experience required, a composite examination consisting of Elements 1 and 2.
- (b) General Class operator. hold an unexpired (or expired, but within the grace period) FCC-issued Technician Class license granted one year or more prior to the examination date, a composite examination consisting of Elements 1 and 3.
- (c) Amateur Extra Class operator. hold an unexpired (or expired, but within the grace period) FCC-issued General Class license granted two years or more prior to the examination date; a composite examination consisting of Elements 1 and 4.

4.3.2 In reference to Sections 3.3.2, 3.3.3, 3.3.4, and 3.3.7, Petitioners recommend the following change to 47CFR97.503:

Sec 97.503 Element standards and scoring

- (a) A telegraphy examination must be sufficient to prove that the examinee has the ability to send correctly by hand and to receive correctly by ear texts in the international Morse code at not less than the prescribed speed, using all the letters of the alphabet, numerals 0-9, period, comma, question mark, slant mark, and prosigns AR, BT, and SK.
 - (1) Element 1: 5 words per minute. Score to be one-half point each for every character within the single longest continuous string of characters correctly received up to a maximum of twelve points.
- (b) A written examination must be such as to prove that the examinee possesses the operational and technical qualifications required to perform properly the duties of an amateur service licensee. Each written examination must be comprised of a question set as follows:

(1) Element 2 44 questions concerning the privileges of a Technician Class operator license as follows

- I Principals of DC, AC, and RF Circuits and their Circuits and Components - 8 Questions
- I Rules and Regulations - 12 Questions
- II Amateur Practices and Operating Procedures - 8 Questions
- III Antennas, Feed Lines, and Propagation - 4 Questions
- IV Signals and Emissions - 8 Questions
- V RF Safety - 4 Questions

(2) Element 3: 88 questions concerning the privileges of a General Class operator license as follows

- I Principals of DC, AC, and RF Circuits and their Circuits and Components - 20 Questions
- II Rules and Regulations - 20 Questions
- III. Amateur Practices and Operating Procedures - 16 Questions
- IV Antennas, Feed Lines, and Propagation - 8 Questions
- V Signals and Emissions - 16 Questions
- VI RF Safety - 8 Questions

(3) Element 4 88 questions concerning the privileges of an Amateur Extra Class operator license as follows

- I Principals of DC, AC, and RF Circuits and their Circuits and Components - 24 Questions
- II Rules and Regulations - 16 Questions
- III Amateur Practices and Operating Procedures - 12 Questions
- IV Antennas, Feed Lines, and Propagation - 12 Questions
- V Signals and Emissions - 16 Questions
- VI RF Safety - 8 Questions

(c) Scoring of composite examinations shall be as follows

(1) Element 1 Score to be one-half point each for every character within the single longest continuous string of characters correctly received up to a maximum of twelve points.

(2) Element 2 Each correct answer shall be worth 2 points

(3) Elements 3 and 4 Each correct answer shall be worth 1 point

(d) The final score for any composite examination shall be the sum of Element 1 and Element 2, 3, or 4 scores as appropriate. The minimum passing final score is an aggregate 75 points for any class of license.

4.3.3 In reference to paragraphs 3.3.3, 3.3.5, and 3.3.6, petitioners recommend 47CFR97.505(a) be replaced with the following:

(a) The administering VEs must give credit as specified below to an examinee holding any of the following license grants or license documents

(1) A person who has held an unexpired (or expired, but within the grace period) FCC granted Technician Class license for at least one year is eligible to take the General Class examination

(2) A person who has held an unexpired (or expired, but within the grace period) FCC granted General Class license for at least two years is eligible to take the Amateur Extra Class examination

(3) A CSCE Each element the CSCE indicates the examinee passed within the 365 days prior to **[the effective date of the Commission's Order]** shall be given credit as follows

[i] Element 1: 12 points in lieu of the Element 1 portion of the examination

[ii] Element 3 and 4: 65 points in lieu of the respective portion of the examination

(4) An unexpired (or expired less than 5 years) FCC-issued commercial radiotelegraph operator license or permit: 12 points in lieu of the Element 1 portion of any examination

4.3.4 In reference to Section 3.3, Petitioners recommend the following change to 47CFR97.507

Sec. 97.507 Preparing an examination

(a) Each telegraphy message must be prepared by a VE holding an Amateur Extra Class or General Class operator license

(1) A telegraphy examination must consist of a message sent in the international Morse code at no less than the prescribed speed for a minimum of 5 minutes

The message must contain each required telegraphy character at least once. No message known to the examinee may be administered in a telegraphy examination. Each numeral, punctuation mark and prosign must be counted as 2 letters of the alphabet.

- (b) Written questions must be prepared for the following elements by a VE holding an operator license of the class indicated:
 - (1) Element 4 Amateur Extra Class operator.
 - (2) Elements 1, 2 and 3 Amateur Extra or General Class operator.
- (c) Each question set administered to an examinee must utilize questions taken from the applicable question pool.
- (d) Each telegraphy message and each written question set administered to an examinee for an amateur operator license must be prepared, or obtained from a supplier, by the administering VEs according to instructions from the coordinating VEC.

4.3.5 In reference to paragraph 3.3, petitioners recommend deleting 47CFR97.509(l).

4.3.6 In reference to paragraph 3.3, petitioners recommend 47CFR97.509(m) be renumbered to 47CFR97.509(l).

5. Summary

Petitioners have involved themselves in extensive discussion with other amateurs of all license classes across the country, both on the air and by private e-mail, amateur related newsgroups and forums on the Internet, as well as in person. The same issues have consistently turned up in these discussions. Petitioners have attempted to craft this petition in a manner that addresses the recurring issues. While no one proposal can possibly satisfy everyone, Petitioners have attempted to offer a rational, balanced, workable, and progressive plan to accommodate the stated requirements of the Amateur Radio Service and to reflect the current state of modern communications.

Petitioners' Class Consolidation proposals will allow the Commission to streamline record-keeping and operations by immediately listing all licensees in one of three classes, Technician, General, or Amateur Extra. All classes of license either retain or expand their current privileges. Paperwork and record-keeping burdens on VECs, VEs, licensees, and candidates for license will similarly be significantly reduced.

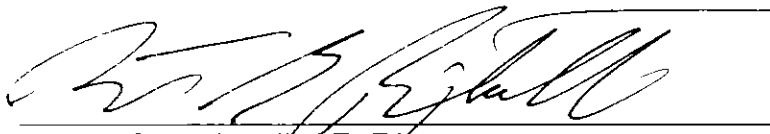
Petitioners' Testing Requirements proposals will ensure all candidates possess the operational and technical qualifications required under international treaty. The proposed testing requirements allow a more comprehensive evaluation of a candidate's knowledge of the greater technical, safety and operational aspects attendant to modern communications. This will assure the ranks of the Amateur Radio Service are filled with

trained operators, technicians, and electronic experts who are ready to contribute to the advancement of the radio art, and to serve in times of local, regional, or national disaster

Petitioners' Frequency and Mode Privileges proposals offer licensees in the consolidated Technician class new encouragement to experiment with digital and other non-voice modes on the high frequency (HF) amateur bands, and allow voice operations in a larger portion of the 10 meter band

Respectfully submitted,

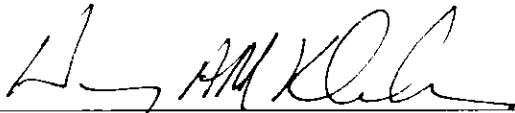
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Date

Attachment A – Article titled "Is Morse Code Dead?" by Walter B Fair, Jr , W5ALT

Is Morse Code Dead?

Especially with the recent ITU Conference decision to not require CW testing on an international treaty basis, there is lots of talk about CW having died. It seems quite often that those proclaiming its death have a personal hatred of Morse code and the effort required to learn it. Unfortunately CW is a subject that cuts deep into the hearts of many hams, either pro or con and evokes strong emotions. In an effort to cut through the emotions, I have assembled some actual data to try and convince myself if CW is really dying or not. This page is the result of my investigation.

Let me first state that I like CW and use it quite a bit, but I also use voice and the digital modes. I don't believe that dropping CW testing will kill ham radio as we know it. I also believe that before jumping to conclusions, one should investigate the facts and the data available. That is what I am documenting here.

Conclusions

Based on the data presented here, it appears premature to announce the death of Morse code on the amateur HF bands. Instead, there may be an increase in activity in recent years. *Based on various data sources, it appears that the overall activity on the ham bands is close to evenly split between SSB and CW, with digital modes accounting for less than 10% of the total activity.* Overall SSB does enjoy about 5% more activity than CW, but that is not an overwhelming percentage.

Based on the analyses presented below, it appears that the CW issue in ham radio is often based on emotion rather than fact. The data do not indicate an overall decrease in CW activity. The argument being used by CW opponents that CW is dying seems to have no merit. On the other hand, the argument that relaxing the CW test requirement to 5 WPM would lead to the destruction of the Amateur Radio Service does not seem to have merit, either. The data show that when the code testing was relaxed in 2000, CW activity remained stable in the following years. Therefore, if more newer hams started using SSB, the same percentage also started using CW. I interpret that to mean that most hams will use the mode that meets their objectives, whether it is CW or not. Of course, there will always be vocal minorities in both the pro and con CW camps.

Therefore I would recommend that the CW testing requirement be relaxed for access to the HF bands. However, CW testing should not be totally dropped, since there is *still* a lot of CW activity. I recommend that CW testing be treated as an operating mode for the General Class license to ensure that all amateurs are familiar with CW, but it should not be used as a barrier. Taking the data interpretation one step further, I would conclude that those with access to the HF bands will discover what the DXers already know: *CW works and if you want to seriously work DX, then the use of CW is useful.*

Data

It's not easy to find actual data on the operating habits of hams, since we are such a diverse group with a wide variety of personal interests, family situations, work requirements, etc. We also span a wide age and experience range and, as in all facets of human social

behavior, tend to stick around with friends w/ who we like and share ideas with. Thus, looking at my operating habits or talking to my friends would not be objective ways to evaluate the issue of whether CW is dying or not

It suddenly dawned on me that there is a large database of objective information on operating habits freely available. It's called the DX Cluster Database, which is maintained by several groups. The largest appears to be sponsored by the DX Summit. The database consists of archived DX spots posted by operators all over the world to notify others that particular DX stations are active. Avid DXers routinely monitor and post to the DX cluster system and these posts are archived. This information has the added advantage of being unbiased, in that the data was not collected to support a pro or anti CW viewpoint, but reflects the actual operating habits of hams who want to work DX.

In order to use this data source, I made a series of queries to the data archive for each band and years from 1997 to 2002. The database limits query results to 10,000 records, so the data used represents the last 10,000 spots of each year. Once the data was gathered, by using the frequency sub-bands, it was possible to sort the information into CW, SSB and digital (DIG) modes. With data for all of the bands, then we can look at the trends and see if there is evidence that CW is dying as an active mode on the ham bands. Of course the 30m band does not permit SSB operation and the 60m band does not permit CW operation, so these bands were excluded from the evaluation. In addition, since the 40m band is a mess with differing frequency allocations in various parts of the world, 40m was also excluded.

A second source of information is available on the ARRL web site in the form of two surveys conducted in March 2003 and June 2002. Both of these surveys asked questions on CW usage on the ham bands. Of course, it can be pointed out that the surveys only reflect the habits of the people who access the ARRL web page and may not be applicable to all hams. That's why we need to do some comparisons and validate the survey results against other data using unbiased statistics.

Validity

As a cross check on the validity of the data, the ARRL posted on it's web site 2 different surveys relating directly to CW operation. In one survey, the question was asked What percentage of your operating time is spent using CW? Of 3073 respondents, 44.0% said that CW was their primary operating mode, while 32.6% said they did not use CW at all. Based on the data in the survey a weighted average of 40.7% CW operating time would be expected. Of major interest is the extremely skewed distribution of results. It seems that lots of hams use mainly CW and lots of hams hardly use CW and the percentage of hams who use CW a little bit is pretty small. It seems that people either love or hate CW and not much in between.

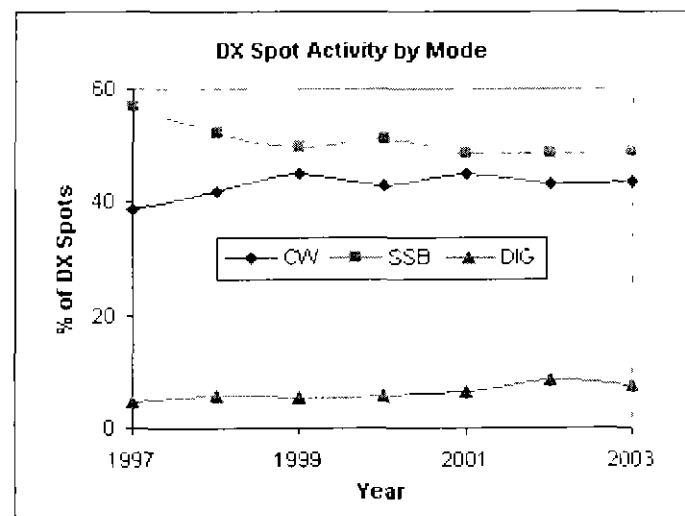
The second survey asked the question What's your average CW speed during casual conversation? Of 2894 respondents, 31.2% said they didn't use CW, which compares fairly well with the results of the previous survey's non-CW users. Based on the number of respondents, a 90% confidence interval of the estimated percentages would be about $\pm 1.7\%$, so there is no statistically significant difference between the 2 responses of 32.6% and 31.2% for non-CW users. Interestingly, the majority of people responding who use CW indicated that their preferred CW speed is in the 10 - 20 WPM range, not too fast or too

slow and in the range required under the old General class CW exam of 13 WPM

Assuming that the respondents in the first survey based their answers on operating during 2002 (the survey was conducted in March 2003), then we would expect that the DX spots should reflect the operating practices, if the results are valid. In fact the DX spot data base for all of the surveyed bands shows that of 45,328 DX spots during the end of 2002, 19,564 or 43.2% were in the CW sub-bands. Based on the number of spots, a 90% confidence interval of about 1% is expected. Comparing the 43.2% of the spots with the 40.7% CW operating time from the first survey shows a difference of 2.5%. Indeed, using the overall statistics for 1997 to July 2003, the percentage of CW spots is 42.9%, representing a difference of only 2.1%. Due to the subjective nature of the survey question, it appears that the statistics are fairly consistent. Overall, a little over 40% of the total amateur operating time in 2002 appears to have been on CW.

Summary

Year	% CW	% SSB	% DIG
1997	38.7	56.7	4.6
1998	42.1	52.2	5.8
1999	45.0	49.7	5.3
2000	43.1	51.1	5.8
2001	45.0	48.7	6.3
2002	43.2	48.5	8.4
2003	43.7	48.8	7.5



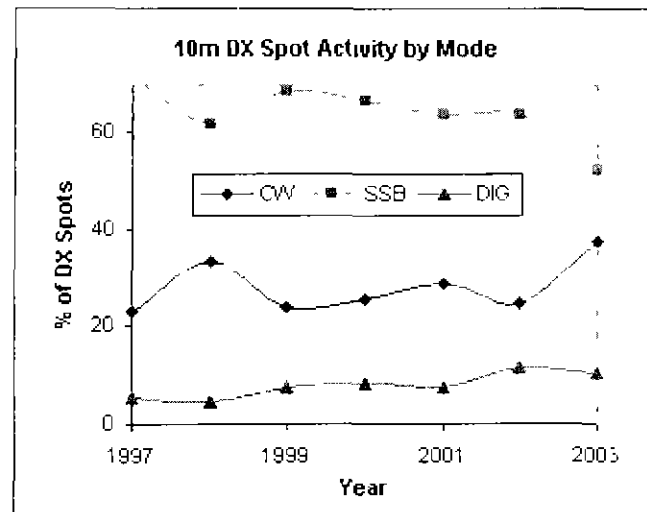
The data abstracted from the DX Cluster database is shown in the table and figure above. Note that the overall SSB activity declined during the period 1997 to 1999, while CW activity increased. Since that time both SSB and CW activity has remained essentially flat showing no major trends. Meanwhile, the relative digital activity has shown a slow but steady increase. Overall, SSB does seem to be more popular than CW, but only by about 5%. During the last 3 years, SSB has accounted for less than half of the DX spots.

Thus, the overall statistics do not seem to support the conjecture that CW is dying and that the CW sub-bands are dead. In fact, there is almost as much DX activity on CW as on SSB. Since the digital modes are taken out of part of the CW sub-bands, it can be seen that for at least the last 3 years, more than half of the DX activity has been in the CW/digital sub-bands, not on SSB.

The following sections will show the activity by band, starting with the traditional 10, 15, 20 and 80 meter bands, then the 12 and 17 meter WARC bands. I think we'll find a couple of surprises that go against "common knowledge" on both sides of the code vs. no-code fence.

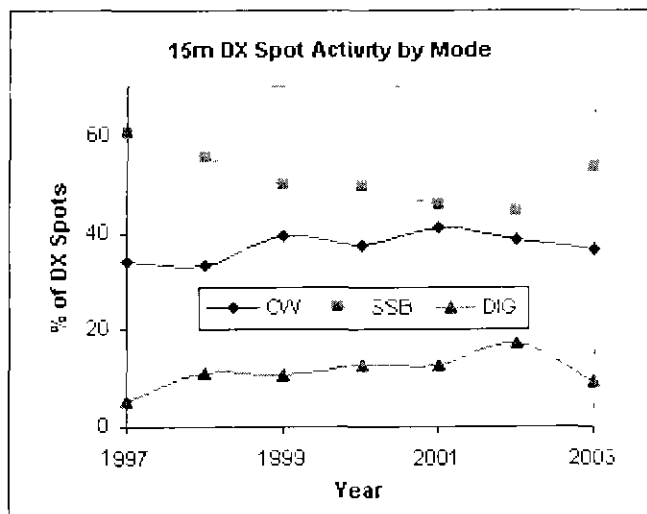
10 Meters

The DX spot activity for the 10 meter band is shown in the graph. Note that there are several fluctuations in the data points, however, the long term trends clearly show a decline in the SSB activity with a corresponding increase in both CW and digital activity. This result is surprising, since 10 meters is where the Novice and Technician Plus Code licensees have HF voice privileges. I would have thought that the voice activity of these operators would indicate an increase in SSB activity, but the statistical trends do not bear that out. Instead, one could hypothesize that these licensees are abandoning SSB for both CW and the digital modes. Note that the overall CW activity was only about 30%, but in 2003 has come fairly close to the overall 40% activity level estimated from other considerations.



15 Meters

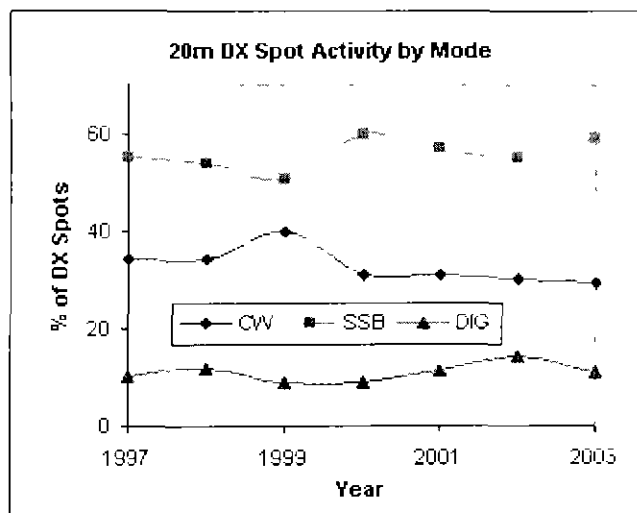
The DX spot activity for the 15 meter band is shown in the graph. Note that the long term trends clearly show a decline in the SSB activity with a corresponding increase in both CW and digital activity. The incomplete data for 2003 shows an upswing in SSB activity and a slight decline in CW activity. However, the majority of the difference in activity appears to be at the expense of the digital modes. It will be interesting to see whether this trend continues. Once again, overall CW activity appears to be close to the previously estimated 40%.



20 Meters

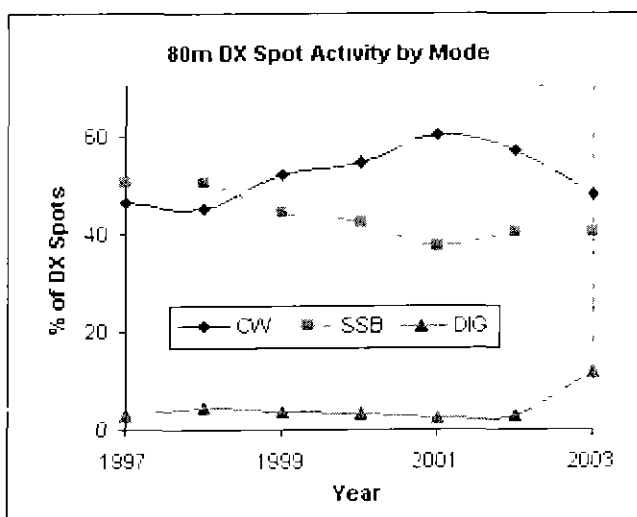
The DX spot activity for the 20 meter band is shown in the graph. Note that the long term trends clearly do not show a decline in the SSB activity. Over the last 3 years, however, there has been somewhat of a decline in SSB activity. The incomplete data for 2003 may indicate that SSB activity is on the rise, but the decline in CW activity is minimal, with the biggest decrease being the digital modes. Once again, it appears that CW activity recently has been fairly stable at around 30% within the confidence intervals of the data.

Since 20 meters is considered the work-horse band for both DX and the digital modes, it will be interesting to see how the trends continue. This band seems to have the highest overall DX activity and the most digital activity. The level of CW activity does seem to be less than the 40% estimated from other sources.



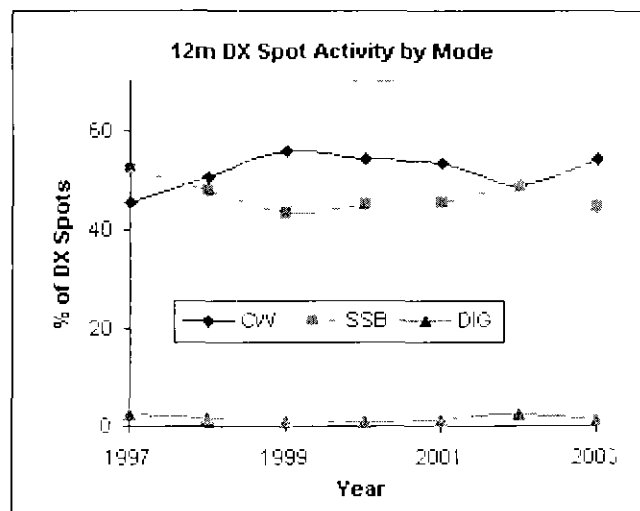
80 Meters

The DX spot activity for the 80 meter band is shown in the graph. Note that the long term trends clearly show a decline in the SSB activity. In addition, except for 1997 and 1998, there has been more CW activity than SSB activity. The increase in CW activity from 1998 to 2001 is clearly offset by diminished SSB activity, with the small amount of digital activity also declining. The incomplete data for 2003 indicate that SSB activity is flat, and the decline in CW activity is replaced by digital activity. For this band the CW activity is significantly higher than the 40% estimate from other sources.



12 Meters

The DX spot activity for the 12 meter band is shown in the graph. Note that the long term trends are hard to define and do not appear to be statistically significant. However, except for 1997, there has been more CW activity than SSB activity. The data from 1999 to 2002 may indicate a slight drop in CW activity, but the incomplete 2003 data may indicate a rebound. With over 50% of the activity being on CW, the CW activity is significantly above the estimated 40% level. Unfortunately, the data also shows that digital activity is almost non-existent.



17 Meters

The DX spot activity for the 17 meter band is shown in the graph. Note that there does not appear to be any long term trend and that activity on all modes has stayed fairly flat. However, for all years there has been more CW activity than SSB activity. The incomplete 2003 data may indicate an increase in the relative amount of CW activity, however, we will have to wait to see how the trend develops. With over 50% of the activity being on CW, the CW activity is significantly above the estimated 40% level. Unfortunately, the data also shows that digital activity is essentially non-existent.

